

Appl No. 09/646,984
Amdt. Dated August 20, 2003
Reply to Office Action of May 20, 2003
Customer No. 27752

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1. (Currently Amended) A variant of a serine protease having a modified amino acid sequence of a wild-type amino acid sequence, wherein the modified amino acid sequence comprises a deletion of an amino acid at one or more of positions that correspond to one or more of positions 70 – 84 of the amino acid sequence of ~~corresponding to~~ subtilisin BPN', wherein the variant is not Δ 75 – 83 or Δ 71.

Claim 2. (Original) A variant according to Claim 1 wherein the serine protease is selected from the group consisting of subtilisin BPN', subtilisin Carlsberg, subtilisin DY, subtilisin 309, proteinase K, and thermitase.

Claims 3-10 (Canceled).

Claim 11. (Original) A variant according to Claim 2 wherein the serine protease is subtilisin BPN'.

Claim 12. (Currently Amended) A variant according to Claim 11 wherein the deletion of an amino acid is at one or more of positions 73-83 in the amino acid sequence of ~~corresponding to~~ subtilisin BPN'.

Claim 13. (Currently Amended) A variant according to Claim 11 wherein the deletion of an amino acid is at one or more of positions 70 and 75-82 in the amino acid sequence of ~~corresponding to~~ subtilisin BPN'.

Claim 14. (Currently Amended) A variant according to Claim 13 wherein the deletion of an amino acid is at one or more of positions 75-82 in the amino acid sequence of ~~corresponding to~~ subtilisin BPN'.

Claim 15. (Original) A variant according to Claim 13 selected from the group consisting of:

- (a) Δ 70, 75 – 82;
- (b) Δ 75 – 82;
- (c) Δ 70, 78, 79;

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- (d) Δ 70;
- (e) Δ 75;
- (f) Δ 76;
- (g) Δ 78;
- (h) Δ 79;
- (i) Δ 81; and
- (j) Δ 82.

Claim 16. (Original) A variant according to Claim 15 selected from the group consisting of:

- (a) Δ 70, 75 – 82;
- (b) Δ 75 – 82;
- (c) Δ 70, 78, 79;
- (d) Δ 70;
- (e) Δ 78; and
- (f) Δ 79.

Claim 17. (Withdrawn) A variant according to Claim 1 further comprising a substitution of one or more of positions 70 – 84 corresponding to subtilisin BPN'.

Claim 18. (Original) A variant according to Claim 1 further comprising one or more stabilizing mutations.

Claim 19. (Withdrawn) A variant according to Claim 17 further comprising one or more stabilizing mutations.

Claim 20. (Original) A variant according to Claim 18 wherein the stabilizing mutations are selected from the group consisting of I107V, K213R, Y217L, Y217K, N218S, G169A, M50F, Q19E, P5A, S9A, I31L, E156S, G169A, N212G, S188P, T254A, S3C + Q206C, and Q271E.

Claim 21. (Original) A variant according to Claim 20 wherein the stabilizing mutation is Y217L.

Claim 22. (Original) A cleaning composition comprising a variant according to Claim 1 and a cleaning composition carrier.

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Claim 23. (Withdrawn) A cleaning composition comprising a variant according to Claim 17 and a cleaning composition carrier.

Claim 24. (Currently Amended) A personal care composition comprising:

- (a) a variant of a serine protease having a modified amino acid sequence of a wild-type amino acid sequence, wherein the modified amino acid sequence comprises a deletion of an amino acid at one or more of positions that correspond to one or more of positions 70 – 84 of the amino acid sequence of ~~corresponding to~~ subtilisin BPN'; and
- (b) a personal care composition carrier.

Claim 25. (Withdrawn) A composition according to Claim 24 wherein the variant further comprises a substitution at one or more of positions 70 - 84 corresponding to subtilisin BPN'.

Claim 26. (Original) A personal care composition according to Claim 24 which is selected from the group consisting of oral cleaning compositions, contact lens cleaning compositions, hair care compositions, beauty care compositions, and skin care compositions.

Claim 27. (Original) A mutant serine protease gene encoding the variant according to Claim 1.

Claim 28. (Withdrawn) A mutant serine protease gene encoding the variant according to Claim 17.